CLAIMS

1. Process for making a polyethylene multi-filament yarn comprising the steps of
   a) spinning at least one filament from a solution of ultra high molecular weight polyethylene in a solvent;
   b) cooling the filament obtained to form a gel filament;
   c) removing at least partly the solvent from the gel filament;
   d) drawing the filament in at least one drawing step before, during or after removing solvent;
   e) applying a spin finish at least once in an amount of 0,1-10 mass% based on the filament, to a filament that contains less than 50 mass% of the solvent; the spin finish comprising at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C; and
   f) removing the spin finish by subsequently exposing the filament to a temperature of below the melting temperature of the filament, such that carbon and oxygen atomic concentrations at the surface of the filament of at least 95 % C and at most 5 % O, as measured by XPS analysis, result.
2. Process according to claim 1, wherein the spin finish is applied to a filament containing less than 10 mass% of the solvent.
3. Process according to any one of claims 1-2, wherein the spin finish is applied in an amount of about 0,2-5 mass%.
4. Process according to any one of claims 1-3, wherein the volatile compound is a non-solvent for polyethylene.
5. Process according to any one of claims 1-4, wherein the spin finish comprises at least one alcohol and/or ketone and water.
6. Process according to any one of claims 1-5, wherein the spin finish comprises at least 99 mass% of at least one volatile compound.
7. Process according to any one of claims 1-6, wherein the volatile compound has a boiling point from 50 to 180 °C.
8. Process according to any one of claims 1-7, wherein the spin finish substantially comprises water.
9. Process according to any one of claims 1-8, wherein the spin finish is removed

by exposing the filament to a temperature of up to about 5 °C below the melting temperature of the filament.

10. Process according to any one of claims 1-9, wherein removing the spin finish coincides with a drawing step.

11. Polyethylene multi-filament yarn obtainable by the process according to any one of claims 1-10, which yarn has a tensile strength of at least 30 cN/dtex.

12. Process for converting polyolefin fibres into a semi-finished or end-use product, comprising the steps of

a) applying 0,5-10 mass% based on the fibres of a spin finish, which spin finish comprises at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C ; and

b) removing the spin finish by exposing the fibres during or after further converting steps to a temperature of below the melting temperature of the fibres.

13. Process according to claim 12, wherein the polyolefin fibres are gel-spun UHMwPE fibres.

14. Semi-finished or end-use product obtainable by the process according to claim 12 or 13, having carbon and oxygen atomic concentrations at the surface of at least 95 % C and at most 5 % O, as measured by XPS analysis.

15. Use of the polyethylene yarn according to claim 11, or the semi-finished or end-use product according to claim 14 in biomedical applications.

16. Biomedical product comprising the polyethylene yarn according to claim 11, or the semi-finished or end-use product according to claim 14.

17. Use of a composition comprising at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C as a spin finish in a process for making polyolefin fibres or for converting polyolefin fibres into a semi-finished or end-use product.